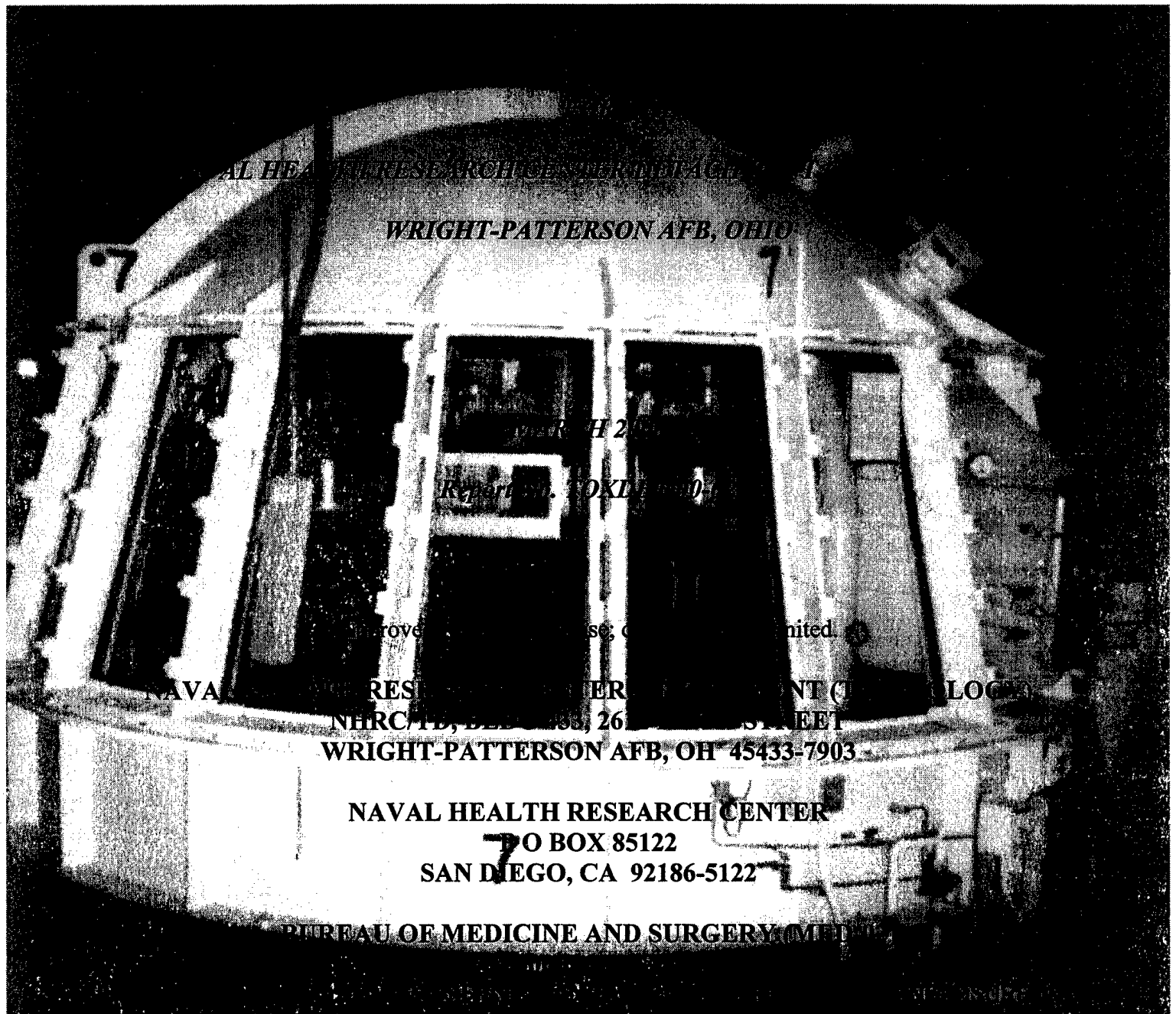


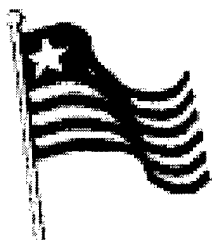
NAVAL HEALTH RESEARCH CENTER  
DETACHMENT (TOXICOLOGY)



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***1999 Command History  
for  
Naval Health Research Center Detachment (Toxicology)  
Wright-Patterson Air Force Base, Ohio***



***March 2000***

**Kenneth R. Still  
Captain, MSC, USN, Ph.D.  
Officer in Charge**

**DISTRIBUTION STATEMENT A  
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October 1998 - September 1999 Command History  
Naval Health Research Center Detachment (Toxicology)  
NHRC TOXDET  
Wright-Patterson Air Force Base, OH

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**1999 Command History  
for  
Naval Health Research Center Detachment (Toxicology)  
Wright-Patterson Air Force Base, Ohio**

**1. BASIC HISTORICAL NARRATIVE:**

**Historical**

On 01 October 1998, this Detachment was realigned under the Naval Health Research Center, San Diego, CA, from the Naval Medical Research Institute, Bethesda, MD.

**Vision**

We shall be an integral asset within the Department of Navy as the center of excellence for toxicology research solving the challenges of today and anticipating those of the future.

**Mission**

We provide the Department of Navy, Bureau of Medicine and Surgery, and other customers with timely solutions to current and anticipated operational problems through an integrated approach to innovative human health effects toxicology research.

**Detachment Goals**

- To gather, interpret, and report research data that characterizes the toxicity of materials that are of interest to the Navy.
- To ensure this data is developed in compliance with good laboratory practices, so as to formulate occupational health hazard evaluations and risk assessment.
- To maintain scientific expertise in providing information used for determining appropriate personnel exposure limits within Navy specific circumstances.

**a. Detachment's Mission:**

The mission of NHRC/Detachment (Toxicology), herein referred to as TOXDET, is to (1) develop the biochemical data necessary to characterize the toxicity of materials of interest to the Navy; (2) use these data to formulate occupational and environmental health-hazard evaluations and risk assessments, including appropriate personnel exposure limits, which addresses Navy specific circumstances of exposure; and (3) develop and maintain a cadre of naval personnel skilled in the discipline of toxicology and its application to health-hazard evaluation and risk assessment.

**b. Description of Command's Organization:**

Officer in Charge	:	Kenneth R. Still, CAPT, MSC, USN
Executive Assistant	:	William K. Alexander, CDR, MSC, USN
Administrative Officer	:	Mrs. Diane V. Hedges
Senior Scientist	:	Robert L. Carpenter, Ph.D.
Leading Chief Petty Officer	:	HMC Edward P. Toohill, USN

NHRC TOXDET research reflects the unit responsiveness to the changing technologies of science while maintaining thrusts in areas that are directly relevant to our most important customer, the fleet sailor.

Immediate Superior in Command:

Commanding Officer, Naval Health Research Center, San Diego, CA

As the Department of Defense realigns organizations and resources, NHRC TOXDET is configured to continue its mission while optimizing the material, personnel, and financial resources under its stewardship. Further, NHRC TOXDET is the Tri-Service Toxicology Center of Excellence in Neurobehavioral and Inhalation Toxicology Research.

# NAVAL HEALTH RESEARCH CENTER DETACHMENT (TOXICOLOGY) PHONE DIRECTORY

**Commercial#: (937) 255-6058      Commercial Fax#: (937) 656-7094**  
**Updated: 27 Jan 00 DSN#: 785-6058      DSN Fax#: 986-7094**  
**Base Operator#: (937) 257-1110**

Name	Room#	Title	Extension	Lab Extension
<b>Alexander, W. K. CDR</b>	<b>104A</b>	<b>XA</b>	<b>244 221</b>	<b>Pager (937) 598-0130*</b>
Briggs, G. B., DVM	110A	Senior Contractor	239	
<b>Carpenter, R. L. Dr.</b>	<b>211B</b>	<b>Senior Scientist</b>	<b>212 220</b>	<b>Pager (937) 940-9098*</b>
Hedges, D. V. Mrs.	103	Admin Officer	225	
<b>Kimmel, E. C., Dr.</b>	<b>Bldg 824</b>	<b>255-0608</b>	<b>255-0605</b>	
Rossi, J. CDR	213B	HEAD NEURO	234	
			231 219	
<b>Still, K. R. CAPT</b>	<b>104B</b>	<b>OIC</b>	<b>202</b>	<b>Cell (937) 430-5876      Pager (800) 680-7106*</b>
Toohill, E. P. HMC	101	LCPO	210	Pager On Base 169-0703      Off Base 257-0069*

**Quarterdeck    ext. 201    e-mail    [username@he.wpafb.af.mil](mailto:username@he.wpafb.af.mil)**

**MAILING ADDRESS**

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 BLDG 433  
 2612 FIFTH ST  
 WPAFB OH 45433-7903

**c. Mission Accomplishments:**



## 1) ***Reproductive Toxicology:***

### **OUTGOING MEDIA**

On 15 January 1999, sixteen Abstracts/Posters were submitted for the 1999 Spring Conference, Hope Hotel, WPAFB, OH. Of the sixteen, this category contained:

1. *The Use of the Computer Assisted Sperm Analysis System to Evaluate the Potential for JP-8 Fuel to Produce Male Reproductive Toxicology*, G.B. Briggs, W.A. Price, A.F. Walsh.

On 28 June 1999, poster entitled, *Evaluation of JP8 Jet Fuel Potential to Produce Male Reproductive Toxicity Using the Computer Assisted Sperm Analysis System*, G.B. Briggs, W.A. Price, A.F. Walsh, K.R. Still, W.K. Alexander, was submitted, cleared and presented at the 39th Annual Teratology Society, Keystone CO, 28 June through 4 July 1999, and subsequently to their publication.

On 21 August 1999, an abstract entitled, *Validation of Bioassays for Reproductive Toxicology*, W. Price; G.B. Briggs; K. Grasman; W.A. Alexander; K.R. Still, was submitted, cleared and presented at the Society for Risk Analysis from December 5 through 8, in Atlanta GA.

On 27 August 1999, an abstract entitled, *Evaluation of Military Fuels for the Potential to Produce Male Reproductive Toxicity in Rats Using the Computer-Assisted Semen Analysis System*, G.B. Briggs; W.A. Price; A.F. Nordholm; A.F. Walsh; W.K. Alexander; K.R. Still, was submitted, cleared and presented at the Society for Risk Analysis from December 5 through 8, 1999, in Atlanta GA.

In the week of 01 October, 1999, eight abstracts were submitted and accepted for the 2000 Society of Toxicology's 39th Annual Meeting to be held in Philadelphia, PA, from 19 through 23 March 2000. Two of those in this category were:

1. *Evaluation of Military Fuel Potential to Produce Male Reproductive Toxicity Using the Computer-Assisted Sperm Analysis System*, G.B. Briggs; W.A. Price; A.F. Walsh; A.F. Walsh; W.K. Alexander; K.R. Still.
2. *Comparative Study in Laboratory Rats and Rabbits to Validate Sperm Quality Methods and Endpoints*, W.A. Price; G.B. Briggs; W.K. Alexander; K.R. Still; K.A. Grasman.

On 08 October 1999, seven abstracts were submitted and accepted for platform presentation at the American Industrial Hygiene Conference and Exposition to be held in Orlando, Florida 19 through 26 May 2000: Two of those in this category are as follows:

1. *Evaluation of Military Fuel Potential to Produce Male Reproductive Toxicity Using the Computer-Assisted Sperm Analysis System*, G.B. Briggs; W.A. Price; A.F. Walsh; W.K. Alexander; K. Still.

2. *Comparative Study in Laboratory Rats and Rabbits to Validate Sperm Quality Methods and Endpoints*, W.A. Price; G.B. Briggs; W.K. Alexander; K.R. Still.

In the week of 08 October, 1999, two papers/posters were presented at the Midwest Teratology Conference:

1. *Evaluation of Military Fuel Potential to Produce Male Reproductive Toxicity Using the Computer-Assisted Sperm Analysis System*, G.B. Briggs, W.A. Price, A.F. Walsh, W.K. Alexander, and K.R. Still.
2. *Comparative Study in Laboratory Rats and Rabbits to Validate Sperm Quality Methods and Endpoints*, W.A. Price, G.B. Briggs, W.K. Alexander, K.R. Still, K.A. Grasman.

In the week of 12 November 1999, four abstracts were submitted for paper/poster presentation at the American College of Toxicology Meeting to be held at the McLean Hilton in McLean, VA, from 07 through 10 November 1999: Two of those in this category are:

1. *Validation of Bioassays for Reproductive Toxicology*, W. Price; G.B. Briggs; K. Grasman; W.A. Alexander; K.R. Still.
2. *Evaluation of Military Fuels for the Potential to Produce Male Reproductive Toxicity in Rats Using the Computer-Assisted Semen Analysis System*, G.B. Briggs; W.A. Price; A.F. Nordholm; A.F. Walsh; W.K. Alexander; K.R. Still.

## 2) **Cardiac Sensitization Toxicology:**

### **OUTGOING MEDIA**

On 10 April 1999, manuscript entitled, *A New Persective for Identifying Potential Cardiac Sensitizers*, E. Smith, T. Nakayama, E. Herderig, J. Powers, G. Briggs, K. Still, R. Hamlin, was submitted, cleared and sent back for changes. During the week from 18 through 22 October 1999, it was changed, re-cleared and re-sent for publication in **Toxicological Sciences**, the official journal of the Society of Toxicology.

In the week of 01 October, 1999, eight abstracts were submitted and accepted for the 2000 Society of Toxicology's 39th Annual Meeting to be held in Philadelphia, PA, from 19 through 23 March 2000. One of those in this category was:

1. *A New Perspective for Identifying Potential Cardiac Sensitizers*, E. Smith; T. Nakayama; E. Herderick; J. Powers; G. Briggs; K. Still; R. Hamlin.

On 08 October 1999, seven abstracts were submitted and accepted for platform presentation at the American Industrial Hygiene Conference and Exposition to be held in Orlando, Florida 19 through 26 May 2000. One of those in this category is as follows:

1. *A New Perspective for Identifying Potential Cardiac Sensitizers*, E. Smith; T. Nakayama; J. Powers; G. Briggs; K. Still; R. Hamlin.

### 3) **Risk Assessment:**

#### **OUTGOING MEDIA**

On 15 January 1999, sixteen Abstracts/Posters were submitted for the 1999 Spring Conference, Hope Hotel, WPAFB, OH. Of the sixteen, the following were in this category:

1. *Software Environments for Physiologically Based Pharmacokinetic Model Simulation*, R.L. Carpenter.
2. *Comparison of the Mass Median Aerodynamic Diameter and the Calculated Mass Median Diameter from Electron Microscopy for Sanding Dust*, W.K. Alexander.
3. *The Role of the Navy Hospital Corpsman Assigned to Support the Tri-Service Toxicology Consortium*, E. Toohill, A. Miladi, K. Rice, T. Carpenter, A. Klosowski, K. Lehman.

On 23 February 1999, two posters were submitted, cleared and presented at the Combined Conference Force/Health Protection Meeting held in Atlanta GA from 23 through 27 August 1999. They are as follows:

1. *The Role of the Navy Hospital Corpsman Assigned to Support the Tri-Service Toxicology Consortium*, E. Toohill, A. Miladi, K. Rice, T. Carpenter, A. Klosowski, K. Lehman.
2. *Lead Exposure from Lead Based Paint Removal by Sanding*, W.K. Alexander.

On 17 March, 1999, nine abstracts/presentations were submitted, accepted, and presented at the 1999 Society of Toxicology's 38th Annual Meeting held in New Orleans, LA, from 14 through 18 March 1999, which were subsequently published in *The Toxicologist*. Two of those in this category were:

1. *Comparison of Software Environments for Physiologically Based Pharmacokinetic Model Simulation*, R.L. Carpenter.
2. *The Use of Risk Assessment in Navy Deployment Toxicology*, G.B. Briggs; W.K. Alexander; K.R. Still.

On 27 April 1999, the following six abstract/posters were submitted and cleared for presentation at Society for Neuroscience 29th Annual Meeting, 23-28 Oct 99, Miami Beach FL. They were subsequently published in their proceedings 23 October 1999: One of those in this category is as follows:

1. *Computer Environment in PBPK Simulation Model*, R.L. Carpenter.

On 04 through 05 May 1999, two abstract/posters were submitted/cleared for presentation at the Society of Risk Assessment on 5 through 8 December 1999 in Atlanta GA.

1. *DBNP Exposure to Navy Personnel*, W.K. Alexander; K.R. Still; G.B. Briggs.
2. *Weapons of Opportunity*, W.K. Alexander; K.R. Still; G.B. Briggs.

A manuscript entitled, *Weapons of Opportunity*, W.K. Alexander; G.B. Briggs; K.R. Still, was submitted, cleared and then sent for possible publication in **Proceedings** on 12 May 1999.

Journal article entitled, *Application of Neurobehavioral Toxicology Methods To the Military Deployment Toxicology Assessment Program*, J. Rossi III; G.D. Ritchie; C.L. Wilson; P.L. Knechtges; A.F. Nordholm; J. Lin; W.K. Alexander; K.R. Still was submitted, cleared, and sent to Drug and Chemical Toxicology for publication on 18 June 1999.

*The Layman's Guide to Toxicology*, Editors: K.R. Still; C.L. Wilson, JANNAF/CPIA Special Interim Publication, was submitted and cleared from on 25 June 1999 for publication.

*Toxicity of 2,6-Di-tert-butyl-4-Nitrophenol (DBNP)*, W.K. Alexander; G.B. Briggs; K.R. Still; W.W. Jederberg; K. MacMahon; W.H. Baker; C. Mackerer, was submitted, cleared and sent to Applied Occupational and Environmental Hygiene on 01 July 1999 for publication.

During the week of 19 July 1999, CDR Alexander received confirmation of acceptance to present a paper entitled, *Weapons of Opportunity*, at the 16th International Symposium for Military Operational Research at the Royal Military College of Science, Shrivenham, UK, to be delivered on 03 September 1999.

A manuscript entitled, *Risk Assessment in Navy Deployment Toxicology*, K.R. Still; G.B. Briggs; P. Knechtges; W.K. Alexander; C.L. Wilson, was submitted, cleared and sent to journal **Human and Ecological Risk Assessment (HERA)** 27 August 1999 for publication.

On 10 September 1999, an abstract entitled, *Frontiers in Pharmacokinetics: Applications to Toxicology and Risk Assessment*, R.L. Carpenter, was submitted, cleared, and presented to the International Congress on Advances in Pharmacology and Therapeutics, in New Delhi, India.

On 06 October 1999, three Abstract/Posters were submitted to the Association of Military Surgeons of the United States (AMSUS) Conference, held in Anaheim, CA 7-12 Nov 99. They are as follows:

1. *The Role of Hazardous Material and Control Program Managers in Toxicology Research Laboratories*, E. Toohill; A. Klosowski; K. Lehman; K. Still; W. Alexander.
2. *The Role of the Navy Corpsmen Performing as Research Technicians for Environmental Assessments on Aviation Warfare Counter Measure Materials*, E. Toohill; K. Lehman; T. Carpenter; K. Rice, A. Klosowski; K. Still; W. Alexander; C. Wilson.

3. *The Role of the Navy Corpsmen Performing as Research Technicians on Vaporized Military Aviation Fuels Projects*, E. Toohill; T. Carpenter; K. Rice; A. Miladi; A. Klosowski; K. Lehman; K. Still; W. Alexander; C. Wilson; R. Carpenter.

On 08 October 1999, seven abstracts were submitted and accepted for platform presentation at the American Industrial Hygiene Conference and Exposition to be held in Orlando, Florida 19 through 26 May 2000: Two of those that are in this category are:

1. *Toxicity of 2,6 Di-tert-Butyl-4-Nitro-Phenol (DBNP)*, W.K. Alexander; K.R. Still; G.B. Briggs.
2. *Weapons of Opportunity*, W.K. Alexander; K.R. Still; G.B. Briggs.

On 12 November 1999, four abstracts were submitted for paper/poster presentation at the American College of Toxicology Meeting to be held at the McLean Hilton in McLean, VA, from 07 through 10 November 1999: One of those in this category is:

1. *Toxicity of 2,6 Di-tert-butyl-4-nitrophenol (DBNP)*, W.K. Alexander; K.R. Still; G.B. Briggs.

During the week of 22 through 26 November 1999, a paper entitled, *Weapons of Mass Destruction Vs Weapons of Opportunity*, CAPT Still, CDR Alexander, and Dr. Briggs was accepted for publication as a professional note in the United States Naval Institute's publication **Proceedings**.

Platform Presentation entitled, *Risk Assessment in Navy Toxicology*, G. Briggs, K.R. Still, W.K. Alexander, C. Wilson, was delivered at the Society for Risk Analysis Annual Meeting, held 06 through 11 December 1998, in Phoenix AZ.

Three abstract/presentations were submitted/cleared/accepted for the Ohio Valley Society of Toxicology (SOT) Conference, 30 Oct 98, Wright-State University, Dayton OH. They were subsequently published in their proceedings. Two of the three in this category are:

1. *The Use of Risk Assessment in Navy Deployment Toxicology*, G. Briggs; W. Alexander; K. Still.
2. *Emerging Issues for Endocrine Disrupting Chemicals in Naval Operations*, G. Briggs; K. Still.

#### **4) Neurobehavioral Toxicology:**

##### **OUTGOING MEDIA**

On 01 January 1999, Abstract/Poster entitled, *The Neurobehavioral Toxicity of JP-8, JP-5, and JP-4 Jet Fuels*, A.F. Nordholm, G.D. Ritchie, W. Malcolm, R.L. Carpenter, J. Rossi III, was submitted for 1999 JANNAF Propellant Development & Characterization Subcommittee.

##### **OUTGOING MEDIA**

On 15 January 1999, sixteen Abstracts/Posters were submitted for the 1999 Spring Conference, Hope Hotel, WPAFB, OH. The five in this category were:

1. *Pharmacological Modulation of Behavioral Convulsions Induced by TMPP*, J. Rossi III, G.D. Ritchie, S.M. McInturf, A.F. Nordholm.
2. *Paroxysmal Discharges Induced by TMPP in Rat Hippocampal Pyramidal Cells*, J. Lin, G.D. Ritchie, A.F. Nordholm, J. Rossi III.
3. *Validation of Animal Based Neurobehavioral Toxicity Batteries: Assessment of Predictive Validity of the Neurobehavioral Toxicity Assessment Battery (NTAB) for use in Human Toxicological Risk Assessment*, J. Rossi III, G.D. Ritchie, A.F. Nordholm, K.R. Still.
4. *Neurobehavioral Toxicity of JP-8 and JP-5 Jet Fuels*, G.D. Ritchie, C.Y. Ademujohn, M. Holmes, D. Maken, W.J. Malcomb, S.M. McInturf, A. Miladi, E. Toohill, L. Tubbs, A.F. Walsh, H. Zhang, A.F. Nordholm, J. Rossi, C.L. Wilson, R.L. Carpenter.
5. *Validation of the Navy Neurobehavioral Toxicity Assessment Battery (NTAB)*, A.F. Nordholm, C.Y. Ademujohn, M. Holmes, A. Jung, A. Miladi, S.M. McInturf, G.D. Ritchie, J. Rossi, K.R. Still.

Nine abstracts/presentations were submitted, accepted, and presented at the 1999 Society of Toxicology's 38th Annual Meeting held in New Orleans, LA, on 14 through 18 March 1999, which were subsequently published in *The Toxicologist*. Three of those in this category were:

1. *Paroxymal Discharges Induced by Trimethylolpropane Phosphate (TMPP) in Rat Hippocampal Pyramid Cells*, J. Lin; G.D. Ritchie; A.F. Nordholm; J. Rossi III.
2. *Pharmacological Modulation of Behavioral Convulsions Induced by Trimethylolpropane Phosphate (TMPP)*, J. Rossi III; G.D. Ritchie; S.M. McInturf; A.F. Nordholm.
3. *Validation of the Navy Neurobehavioral Toxicity Assessment Battery (NTAB)*, S.M. McInturf; G.D. Ritchie; C.Y. Ademujohn; A.F. Nordholm; J. Rossi III.

On 27 April 1999, six abstract/posters were submitted and cleared for presentation at Society for Neuroscience 29th Annual Meeting, held on 23-28 Oct 99, in Miami Beach FL. They were subsequently published in their proceedings. Four of those in this category are:

1. *Effects of Fluorocarbons CFC-12 (Dichlorodifluoromethane) and HFC-134A (1,1,1,2-Tetrafluoroethane) on Brainstem and Hippocampal Neurons*, J. Lin, J.B. Dean, G.D. Ritchie, J. Rossi, A.F. Nordholm.
2. *Use of the Neurobehavioral Toxicity Assessment Battery (NTAB) Changes in Behavior Associated with JP-4 Exposure*, S.M. McInturf; J. Rossi; N.A. Ritucci; G.D. Ritchie; A.F. Nordholm.
3. *Neurobehavioral Effects from Repeated Exposure of Rats to JP-8 Jet Fuel Vapor*, J. Rossi; A.F. Nordholm; S.M. McInturf; G.D. Ritchie.
4. *Neurobehavioral Effects from Repeated Exposure of Rats to JP-5 Jet Fuel Vapor*, G.D. Ritchie; A.F. Nordholm; S.M. McInturf; J. Rossi.

On 1 May 1999, Abstract/Platform Presentation entitled, *Application of Neurobehavioral Toxicology Methods to Military Deployment Toxicology Risk Assessment*, J. Rossi; A.F. Nordholm; G.D. Ritchie; W.K. Alexander; K.R. Still, submitted and cleared for Society for Risk Assessment, 5-8 Dec 99, Atlanta GA.

On 10 May 1999, the Abstract/Platform Presentation entitled, *The Neurobehavioral Toxicity of JP-8, JP-5 and JP-4 Jet Fuels*, A.F. Nordholm; G.D. Ritchie; W. Malcolm; R.L. Carpenter; J. Rossi; K.R. Still, was submitted and cleared to send to JANNAF, San Diego CA, for 25 through 27 March 1999. It was subsequently published in JANNAF Proceedings.

A manuscript entitled, *Induction of Epileptiform Discharges in Hippocampal CA1 Neurons by Trimethylpropane Phosphate (TMPP)*, J. Lin; G.D. Ritchie; J. Rossi III, A.F. Nordholm, was submitted, cleared and then sent for possible publication in **GABAB Receptors**, and presented at the 8th Neuropharmacology Conference on 28 May 1999.

In June 1999, the manuscript entitled, *Trimethylolpropane Phosphate (TMPP) Induces Epileptiform Discharges in the CA1 Region of the Rat Hippocampus*, J. Lin; G.D. Ritchie; J. Rossi III; J.J. Pancrazio; D.A. Stenger; A.F. Nordholm, was submitted, cleared and sent to the journal, **NeuroToxicology** for publication.

On 20 June 1999, two abstract/presentations were submitted/cleared/accepted for the 7th International Symposium on Neurobehavioral Methods and Effects in Occupational and Environmental Health, held in Stockholm Sweden, on 20 through 23 Jun 1999. They were subsequently published in their proceedings. They were as follows:

1. *The Use of Pavlovian Conditioning Procedures in Behavioral Neurotoxicology*, A.F. Nordholm; J. Rossi; S.M. McInturf; G.D. Ritchie.



2. *The Systematic Validation of NTAB, Assessing Predictive Validity with the GASH and the GASP*, J. Rossi III; G.D. Ritchie; A.F. Nordholm; K.R. Still.

On 23 June 1999, poster entitled, *Construct Validation in Extrapolations to Humans from Animal Neurobehavioral Studies: Validation of the Neurobehavioral Toxicity Assessment Battery (NTAB)*, J. Rossi; G.D. Ritchie; K.R. Still; A.F. Nordholm, was submitted, cleared and presented to the International Behavioral Neuroscience Society Meeting; held 23 through 26 June 1999; in Nancy, France.

*Neurotoxicological Evaluation of Trimethylolpropane Phosphate (TMPP)* was submitted for and cleared 27 August 1999 for presentation in the Department of Physiology at a talk held at Wright State University, Dayton, OH.

On 1 September 1999, Platform Presentation entitled, *Behavioral Sensitization Induced by an Organophosphate Convulsant*, J. Rossi; M. Bekkedal; A.F. Nordholm; B. Knutson; J. Panksepp; G.D. Ritchie, was submitted and cleared to Behavioral Pharmacology Conference, 1-4 Sep 99, Boston MA. It was subsequently published in their proceedings.

On 10 September 1999, an abstract entitled, *Use of Human Evaluation Methods in Validation of Animal-Based and In Vitro-Based Toxicity Assessment Systems*, J. Rossi III; G.D. Ritchie; A.F. Nordholm; K.R. Still was submitted, cleared, and presented at Primedica Neurotoxicology Workshop, North Wales, PA.

In October 1999, a manuscript entitled, *Toxicity of Chemical Mixtures: Proteomic Analysis of Persisting Liver and Kidney Protein Alterations Induced by Repeated Exposure of Rats to JP-8 Jet Fuel Vapor*, F.A. Witzmann, R.L. Carpenter, G.D. Ritchie, C.L. Wilson; A.F. Nordholm; and J. Rossi III, was submitted, cleared, and subsequently sent to **Electrophoresis** for publication.

In October 1999, manuscript entitled, *Use of a Computer-Assisted Sperm Analysis (CASA) System to Evaluate Male Reproductive Toxicity in Rats Exposed Subchronically to JP-8 or JP-5 Jet Fuel Vapor*, G.B. Briggs; W.A. Price; G.D. Ritchie; W.K. Alexander; K.R. Still was submitted, cleared and sent to journal **Reproductive Toxicology** for publication.

On 01 October, 1999, eight abstracts were submitted and accepted for the 2000 Society of Toxicology's 39th Annual Meeting to be held in Philadelphia, PA, from 19 through 23 March 2000. Three of the abstracts in this category were:

1. *Fluorocarbons CFC-12 (Dichlorodifluoromethane) and HFC-134A (1,1,1,2-Tetrafluoroethane) Induce Depolarization of Brainstem and Hippocampal Neurons*, J. Lin; J.B. Dean; G.D. Ritchie; A.F. Nordholm; J. Rossi III.
2. *Proteomic Analysis of Renal and Hepatic Protein Expression in Rats Exposed Repeatedly to Jet Fuel Vapor*, F. Witzmann; G.D. Ritchie; R.L. Carpenter; A.F. Nordholm; C.L. Wilson; J. Rossi III.

3. *Investigation of the Effects of Repeated Exposure to JP-8 Vapor on the Cognitive Capacity of Rats*, J. Rossi III; D. Wright; G.D. Ritchie; W. Malcomb; R.L. Carpenter; M.Y.V. Bekkedal; A.F. Nordholm; G. Wenger.

On 08 October 1999, seven abstracts were submitted and accepted for platform presentation at the American Industrial Hygiene Conference and Exposition to be held in Orlando, Florida, 19 through 26 May 2000: One of those that are in this category is:

1. *Validation of Animal-Based and In Vitro-Based Toxicology Assessment Systems*, G.D. Ritchie; M.Y.V. Bekkedal; K.R. Still.

On 5 November 1998, the abstract/presentation entitled, *Effects of GABAB Antagonist CGP-35348 and/or Human AED's on Spontaneous and Chemically Induced Absence Like SDW's in Fischer 344 Rats*, G.D. Ritchie, J. Rossi III, A.F. Nordholm, for presentation at the 4th International GABAB Symposium, Los Angeles, CA, 5 through 7 November 1998 was submitted, cleared and published in their proceedings.

On 12 November 1999, four abstracts were submitted for paper/poster presentation at the American College of Toxicology Meeting to be held at the McLean Hilton in McLean, VA, from 07 through 10 November 1999: One of those in this category is:

1. *Chemical Sensitization Induced by Exposure to TMPP, an Organophosphate Convulsant*, J. Rossi III; G.D. Ritchie; M.Y.V. Bekkedal; A.F. Nordholm; K.R. Still.

Three abstract/presentations were submitted/cleared/accepted for the Ohio Valley Society of Toxicology (SOT) Conference, 30 Oct 98, Wright-State University, Dayton OH. They were subsequently published in their proceedings. One of those in this category is:

1. *Predictive Validation of the Neurobehavioral Toxicity Assessment Battery (NTAB): The Progressive Ratio Test of Motivational System Integrity*, C. Ademujohn, J. Rossi, G.D. Ritchie, A.F. Nordholm.

## 5) *Inhalation Toxicology:*

### OUTGOING MEDIA

On 15 January 1999, sixteen Abstracts/Posters were submitted for the 1999 Spring Conference, Hope Hotel, WPAFB, on 15 April 1999. The six in this category were:

1. *A Simple Inexpensive Solid Fuel Furnace for Small Scale Combustion Toxicity Studies*, J.E. Reboulet, E.C. Kimmel.
2. *Pulmonary Function in Untreated Rats*, G.L. Whitehead, J.E. Reboulet, E.C. Kimmel.
3. *The Generation of Respirable Particulates and Fibers from the Partial Pyrolyzation of Advanced Composite Materials*, D.L. Courson, E.C. Kimmel, J.C. Lipscomb, R.L. Carpenter.
4. *A Small Animal Plethysmography Exposure Tube for Determination of Respiratory Mechanics During Exposure Using Non-Invasive Methods to Measure Intrapleural Pressure*, E.C. Kimmel.
5. *A Model for Predicting Carboxyhemoglobin Formation Rate in F-344 Rats*, E.C. Kimmel, E.A. Smith, R.L. Carpenter.
6. *Use of Aerosol Deposition Model to Compare Inhalation Toxicity Risk Between Laboratory and Field Aerosol Exposures*, R.L. Carpenter, E.C. Kimmel.

Nine abstracts/presentations were submitted, accepted, and presented at the 1999 Society of Toxicology's 38th Annual Meeting held in New Orleans, LA, on 14 through 18 March 1999, which were subsequently published in *The Toxicologist*. Four of those in this category were:

1. *Pulmonary Function in Untreated Rats*, G.L. Whitehead; J.E. Reboulet; E.C. Kimmel.
2. *The Generation of Respirable Particulate and Fibers from Partial Pyrolyzation of Advanced Composite Materials*, D.L. Courson; E.C. Kimmel; J.C. Lipscomb; R.L. Carpenter.
3. *A Small Animal Plethysmograph/Exposure Tube for Determination of Respiratory Mechanics During Exposure Using Non-Invasive Methods to Measure Intrapleural Pressure*, E.C. Kimmel.
4. *A Simple Inexpensive Solid Fuel Furnace for Small Scale Combustion Toxicity Studies*, J.E. Reboulet; E.C. Kimmel.

On 06 May 1999, a manuscript entitled, *A Simple Inexpensive Solid Fuel Furnace for Small Scale Combustion Toxicity Studies*, J.E. Reboulet; E.C. Kimmel, was submitted to Journal of Fire Sciences and subsequently published.

Journal article entitled, *Pyrotechnically Generated Aerosols Chemical Composition vs Toxicity*, E.A. Smith; J.E. Reboulet; S.L. Prues; R.L. Carpenter; K.R. Still was submitted, cleared, and sent to Joint Vet and Human Toxicity 10 May 1999.

On 10 September 1997, manuscript entitled, *Aerosol Deposition Modeling Using ACSL*, R.L. Carpenter, E.C. Kimmel, was submitted, cleared and mailed to the Drug and Chemical Toxicology, 22(1), 42-56 (1999). On 1 February 1999, the paper was published.

On 10 September 1999, an abstract entitled, *Characterization of Aerosols Generated Through Pyrolysis of Advanced Composite Materials*, D.L. Courson; W.K. Alexander; E.C. Kimmel, was submitted, cleared, and presented at SERDP in Arlington VA 30 November 1999.

The manuscript entitled, *Breathing Zone Particle Size and Lead Concentration From Sanding Operations to Remove Lead Based Paints*, W.K. Alexander, R.L. Carpenter, E.C. Kimmel, was submitted, cleared and mailed to the Drug and Chemical Toxicology. On 1 February 1999, the paper was published, 22(1), 42-56 (1999).

In the week of 01 October, 1999, eight abstracts were submitted and accepted for the 2000 Society of Toxicology's 39th Annual Meeting to be held in Philadelphia, PA, from 19 through 23 March 2000. One of those in this category is:

1. *Effects of Expired Carbon Dioxide on Ventilation and Aerosol Deposition in Guinea Pigs Undergoing Barometric Plethysmography*, E.C. Kimmel; G.S. Whitehead; R.L. Carpenter.

On 08 October 1999, seven abstracts were submitted and accepted for platform presentation at the American Industrial Hygiene Conference and Exposition to be held in Orlando, Florida 19 through 26 May 2000: One of those that is in this category is:

1. *Characterization of Aerosols Generated Through Pyrolysis of Advanced Composite Materials*, D.L. Courson; W.K. Alexander; K.R. Still; E.C. Kimmel.

## 6) *Chaff Countermeasure Toxicity:*

### OUTGOING MEDIA

On 15 January 1999, sixteen Abstracts/Posters were submitted for the 1999 Spring Conference, Hope Hotel, WPAFB, OH. The one in this category was:

1. *Toxicity of Degradable CHAFF Countermeasures*, C.L. Wilson.

On 27 April 1999, the following six abstract/posters were submitted and cleared for presentation at Society for Neuroscience 29th Annual Meeting, 23-28 Oct 99, Miami Beach FL. They were subsequently published in their proceedings 23 October 1999: One of those in this category was:

1. *Bioavailability of Aluminum from Degradable CHAFF Countermeasures*, C.L. Wilson; H. Zhang; K. Lehman; A. Miladi; M. Holmes; W.K. Alexander; A.F. Nordholm.

On 02 September 1999, LT Wilson submitted a draft copy of a paper to NAVAIR entitled, *Chaff Countermeasures: Environmental Chemistry Studies*.

On 01 October, 1999, eight abstracts were submitted and accepted for the 2000 Society of Toxicology's 39th Annual Meeting to be held in Philadelphia, PA, from 19 through 23 March 2000. One of those in this category is:

1. *Estimation of Aluminum Bioavailability from Degradable Chaff Countermeasures Using a Physiologically-Based Extraction Test*, C.L. Wilson; H. Zhang; K. Lehman; T. Carpenter; W. Alexander.

In December 1999, a manuscript entitled, *Estimation of Aluminum Contributions of U.S. Navy Flight Training Operations in the Chesapeake Bay*, C.L. Wilson; A. Miladi; R.L. Carpenter; W.K. Alexander; K.R. Still, was submitted, cleared, and subsequently sent to **Environmental Science and Technology**.

## **7) Administration:**

### **FACILITIES AND EQUIPMENT**

On 15 January 1999, Dr. Carpenter and Dr. Kimmel began evaluating a new, wide range, aerosol sizing instrument for use in Combustion Toxicology and ALI Research.

On 23 April 1999, LT Nordholm acquired an additional 1,000 square feet of office and laboratory space at the VA facility at no cost to the government.

On 30 April 1999, Hamilton Thorne delivered a replacement Sperm Analyzer.

On 13 July 1999, Base Engineering completed their quarterly inspections of fume hoods in building 433.

On 14 July 1999, Base Civil Engineering completed a Quality Assurance Audit of the Facility Cleaning Contract.

On 14 July 1999, Base Radiation/Safety completed a routine inspection of Building 433.

On 15 July 1999, Wright-Patterson AFB's Occupational Medicine conducted a review of Medical Surveillance and files/readiness.

### **FUNDING**

On 28 January 1999, LT Wilson received confirmation of acceptance of a three-year project examining liver metabolites resulting from jet fuel exposure.

On 17 March 1999, Geo-Centers, Inc. prepared a Statement of Work (SOW) to facilitate a project between NHRC TOXDET and the University of North Texas to perform neurobehavioral research on a Defense Advanced Research Projects Agency (DARPA) project.

On 30 April 1999, TOXDET received collaborative funding from DARPA via Naval Research Laboratories (NRL) for additional neurobehavioral studies involving jet fuels.

On 02 September 1999, Neurobehavior began conducting a pilot eyeblink human study.

### **CRADAs and FUNDING**

On 23 April 1999, work still continued on the CRADA with Southern Illinois University School of Medicine.

On 12 November 1999, the CRADA between Shell Oil, Inc., UK and the NHRC TOXDET, a collaborative project with the Neurobehavioral Department, was finalized.

The CRADA was finalized on 17 May 1999; on 21 May 1999 the CRADA with San Diego Instruments (SDI) was forwarded for final signatures.

On 28 June 1999, NHRC TOXDET developed a Memorandum of Understanding (MOU) with AFRL/HR to hire co-op students for the neurobehavioral research group.

On 15 January 1999, LT Wilson was finalized the Fatigue Protein Project Proposal in collaboration with the Department of Veteran's Affairs for a DoD/VA funded research program.

On June 14 1999, annual Work Unit progress reports were finalized and forwarded to ONR.

### **PERSONNEL**

Ms. Nancy Loy reported on-board as new Editorial Assistant on 16 February 1999.

HM2 Kim Rice reported on-board from lab school in San Diego, CA on 16 March 1999.

Dr. Marni Bekkedal reported on-board 24 May 1999 as the new GS-12 Research Psychologist.

Dr. Paul Reinhart, Research Toxicologist, GS-13, reported on-board the NHRC TOXDET on 06 July 1999.

On 25 July 1999, CDR John Rossi PCSed to NHRC TOXDET.

Dr. Hong Zhang, Joint Ventures, left NHRC TOXDET at the end of October 1999, for a new position at Stanford University.

**8) Research program descriptions:**

**WORK UNITS**

New:

DN234936 NRL Reimbursable-10001 Consultation on Genomics Experiments	Start: 1-5-00
DN235002 AF Reimbursable-10004 Ammonium Perchlorate Studies	Start: 1-26-00
DN235003 DARPA Reimbursable-10005 DARPA Tissue Based Biosensor (TBB) Technologies	Start: 2-26-00
DN235005 AFOSR Reimbursable (RLC)-10007 Measure Concentration of JP-8 Fog Created by Cold Weather Engine Starts	Start: 3-13-00
DN235000-61153N MR4203-10002 "Fatigue Protein" at Elevated Levels after Extreme Physical Exercise	Start: 1-10-00
DN235001-61153N MR4112-10003 61153N MR4203-10003 Global Assessment Test for Humans (GASH)	Start: 1-15-00
DN235004-63706N-M00096.004-10006 Development of a Tissue Based Sensor System	Start: 3-11-00
DN234932-61152N-MR0004-1906 Cellular and Reproductive Toxicity of (DBNP)	Start: 11-22-99

Continuations:

DN234933-DARPA Reimbursable(Grant)-1907 University of Southern California	Start: 6-29-99
DN234931-61152N.00004.001-1905 Modulation of Phase I Drug Metabolizing Enzyme Activity by JP-8 Jet Fuel Exposure	Start: 1-20-99
DN244555-63706.M00096.004-1516 Trimethylolpropane Phosphate (TMPP)	Start: 10-1-94
DN241218 63706.M00096.004-1605 Relevance of Known Behavioral, Neurophysiological, and Metabolic Processes for Interpreting and Predicting the Neurobehavioral Toxicity of Specific Substances of Important to Military Tri-Service	Start: 10-1-95



DN240570 63706N M00096-1713  
Develop, Test, and Validate a Model for Estimating Human Neurobe-  
havioral Risk for Exposure to Chemical Compounds Start: 10-1-96

DN240571 63706N. M00096-004-1714  
Research of Fire, Gas, and Smoke Induced Adult Respiratory  
Distress Syndrome (ARDS) Start: 10-1-96

DN234935-63721N.W2210 NAWCAD Reimbursable-1822  
CHAFF Start: 6-22-99

DN244519-NEHC Reimbursable-1323  
Risk Assessment - Develop Toxicity Values Start: 10-1-92

Completions/Terminations:

DN234927-61153N-MR4203-1901  
Eyeblink Response Indicators of Performance Degradation: Humans  
(Rossi/Nordholm) Start: 10-16-98 Term: 9-30-99

DN234928-64771N-M0933.001-1902  
JP-8 Jet Fuel Neural  
Toxicology (Carpenter) Start: 4-27-99 Term: 9-30-99

On June 14 1999, Dr. Carpenter received an additional \$40K for his 6.4 research project, Toxicity of Inhaled Jet Fuels: Rational Organ and Neurobehavioral Toxicity Assessment of a Complex Mixture.

DN234932-Mobil Oil Reimbursable-1906  
DBNP Research (Alexander) Start: 5-11-99 Term: 9-30-99

DN240567-61153N-MR4112-1710  
Classically Conditioned Eye Blink  
Response (Rossi) Start: 10-16-98 Term: 9-30-99

DN240568-62233N-MM3330.001-1711  
Cardiac Sensitization (Still) Start: 10-1-96 Term: 9-30-99

## **2. SPECIAL TOPICS:**

### **VISITS**

On 07 April 1999, U.S. Congressman David L. Hobson visited the TOXDET, to discuss Navy Toxicology Research emphasis and the Tri-Service Toxicology Laboratory Military Construction (MILCON).

BG Lee, Singapore Navy, visited the TOXDET on 30 April 1999. Presentations were made by CDR Alexander on Navy Deployment Toxicology; CAPT Stein on CBRE Training; and LCOL(s) Channel on Air Force Deployment Toxicology. BG Lee also toured TOXDET facilities with corresponding briefings from Department Heads.

On 28 May 1999, Dr. R.H. Beers, Geo-Centers Vice President, visited the TOXDET to discuss future support and growth.

CUCS Griffin, Navy Recruiter Huber Heights Office, toured the facilities on 03 June 1999.

FCCS(SW) R. Moore and Mark Wertheimer, Naval Historical Center Washington DC, toured the facilities on 10 June 1999.

On 28 June 1999, MSgt Ogden, from the 10th USAF, Carswell AFB, Ft Worth TX, toured the Inhalation Suite in Building 824, to assess possible collaboration on Combustion Toxicology. MSgt Ogden was developing a training film for personnel involved in F-16 crash recovery operations.

The TOXDET was visited by Open Skies Treaty Personnel on 14 July 1999 to evaluate NHRC/TD as a potential training site for their Counter-terrorism inspectors.

On 18 August 1999, LTC Carlton, USAF, visited the facility to discuss the unit's future role in the US Air Force Integrated Product Team (IPT) on the toxicity of pyrolysis products generated when advanced composite materials are burned.

On 09 September 1999, Ms. Sally Smith arrived and began working with Dr. Kimmel in Inhalation Toxicology. Ms. Smith is a graduate student from the Johns Hopkins University School of Hygiene and Public Health. A CRADA with JHU for her work was developed.

HMCM Weldon visited the TOXDET during the week of 27 September 1999.

On 09 November 1999, CAPT Contreras and LCDR Arevalo, visited the TOXDET, presiding over a meritorious mast to recognize various accomplishments of enlisted personnel at the TOXDET.

On 20 December 1999, CAPT Macys, of ONR, visited the TOXDET to discuss future research opportunities.

## **ACCOMPLISHMENTS**

Petty Officer Carpenter was frocked to HM1 on 17 December 1999.

Around 15 April 1999, Dr. Robert Carpenter was selected as a finalist for the Dayton Chapter of the International Personnel Management Association (IPMA) 37th Annual Federal Employee of the Year Awards Program. Dr. Carpenter was nominated in the Scientific/Engineering/Medical/Legal Category. The luncheon/awards program (hosted by IPMA) was held on May 6, 1999.

Dr. Carpenter received the Air Force Senior Civilian Award and lapel pin at an "All-Hands" Meeting on 06 August 1999. This award was part of an overall Air Force strategy for development and sustainment of Air Force leadership by recognizing the valuable contributions made by Senior Civilians at the GS-15 level and equivalent. The Air Force Senior Civilian logo was designed by the Institute of Heraldry and depicts the Air Force eagle in front of a cloud (with 15 scallops in its edge). This logo may be used for recognition, business cards, and promotion/retirement ceremonies.

Ms. Gatewood and Ms. Gregg were also recognized as nominees for the International Personnel Management Association (IPMA) 37th Annual Federal Employee of the year award.

HM2 Miladi received his Bachelor's Degree in Science from Wright-State University on 12 June 1999.

On 17 March 1999, it was recognized that HMC Toohill received his diploma for a Masters of Science Degree in Chemical Dependency Counseling from LaSalle University.

Recognized on 28 June 1999, Mrs. Hedges completed the Defense Acquisition University Contracting 237 course.

Petty Officer Miladi was frocked to HM2 on 11 Jan 1999.

HM2 Miladi was the TOXDET's 1998 Sailor of the Year candidate, met with the NHRC 1998 SOY Board on 15 January 1999 at NAMRL, and was subsequently selected as NHRC SOY on that date.

## **SEASONAL**

The TOXDET hosted its annual Holiday Dinner Wednesday, 24 November 1999, for all TOXDET personnel and their families.

The holiday routine was in effect from mid-December 1999 through 05 January 2000.

## **NOTABLES**

CAPT Still attended a Deployment Toxicology Planning Meeting in Washington DC on 26 January 1999.

During January 1999, TOXDET negotiated with Air Force Institute of Technology (AFIT) for adjunct faculty positions in the Environmental Department of the Civil Engineering School.

On 15 January 1999, the TOXDET finalized plans for two Cooperative Research Projects with AFIT.

On 28 January 1999, the TOXDET was approached by the USAF Host to submit a briefing on the MILCON for a new Tri Service Toxicology Laboratory at WPAFB.

On 16 through 19 February 1999, CDR Alexander and Dr. Carpenter attended the CO/OIC Conference in Washington, DC.

TOXDET tutors were presented with certificates of appreciation on 02 March 1999 by the Principal of Virginia Stevenson Elementary School for their participation in the Adopt-A-School Volunteer Program.

On 05 March 1999, LT Nordholm and LT Wilson attended a planning meeting for future jet fuel research at Brooks AFB, TX.

CDR Alexander attended the Technical Area Review and Assessment (TARA) briefing in Easton, MD from 9 through 10 March 1999.

Dr. Carpenter visited Southern Illinois University School of Medicine on 06 through 07 April 1999 to prepare and submit a joint research proposal concerning the Pharmacokinetics of Pyridostigmine.

TOXDET Personnel participated and attended the Conference on Topics in Toxicology and Risk Assessment, 12 through 15 April 1999 at Wright-Patterson AFB, Ohio. The conference was sponsored by Tri-Service Toxicology, Wright-Patterson AFB; the National Center for Environmental Assessment, United States Environmental Protection Agency; the Division of Toxicology, Agency for Toxic Substances and Disease Registry and with the cooperation of the National Research Council/National Academy of Sciences. The 1999 conference included training workshops as well as concurrent scientific sessions.

On 15 April 1999, CAPT Still attended the EPA Low Dose Extrapolation Working Group Meeting held at the American Industrial Hygiene Association (AIHA) National Headquarters in Fairfax, VA.

CAPT Still attended a National Academy of Science/Committee on Toxicology (NAS/COT) meeting in Washington, DC, 19 through 20 April 1999, on Acute Exposure Guidelines.

On 23 April 1999, CDR Rossi presented a Deployment Toxicology Seminar at the Naval War College as the TOXDET representative.

TOXDET personnel attended mandatory Anti-Terrorism training on 23 April 1999 provided by Air Force Office of Special Investigations (AFOSI).

On 30 April 1999, CAPT Still chaired two committee meetings, one on Toxicology and the second on Industrial Hygiene. These meetings were for JANNAF Interagency Propulsion Committee of the Chemical Propulsion Information Agency (CPIA).

On 30 April 1999, Dr. Ritchie delivered a podium presentation to JANNAF on Neurobehavioral studies involving jet fuels.

On 30 April 1999, Hospital Corpsmen assigned to the TOXDET volunteered at Wright State University for the St. Joseph's Children's Home Day. The volunteers provided a variety of entertainment and activities.

On 30 April 1999, the Mad River School District newsletter recognized the 1998 through 1999 NHRC TOXDET Adopt-A-School Volunteers.

On 30 April 1999, CAPT Still presided over an awards ceremony to recognize the military members who received an Outstanding on their PRT. All military members received Outstanding this cycle.

LT Wilson participated in the Scientists to Sea Program aboard the USS MOOSBRUGGER (DD980) homeported in Mayport, FL, 1 through 5 May 1999.

On 07 May 1999, Uniform inspection was conducted to coincide with change of uniform to summer whites. No discrepancies were noted during the inspection.

On 07 May 1999, LT Nordholm and CDR Rossi were invited by Office of Naval Research (ONR) to brief Neurobehavioral issues at the Naval Undersea Warfare Center Headquarters (NUWC).

On 07 May 1999, CAPT Still was nominated as an AIHA Task Force member, to write a position paper for the Industrial Hygiene Community on Low Dose Extrapolation for Chemical Exposures (Hormesis).

On 21 May 1999, NHRC TOXDET submitted two IR research full proposals to ONR for DBNP and CO<sub>2</sub> projects.

Dr. Carpenter and LT Wilson presented briefings at a JP-8 Meeting held at the U.S. Army Center for Health Promotion and Preventive Medicine (USACHPPM) as part of the IPT presentation of Navy Research on 21 May 1999.

Dr. Carpenter, LT Wilson, and Dr. Ritchie attended a joint Jet Fuels Meeting at Aberdeen, MD on 21 May 1999. Briefings on TOXDET research were presented by LT Wilson and Dr. Carpenter.

On 28 May 1999, discussions were initiated for a collaborative research project with the United State Air Force (USAF) on Jet Fuel Aerosols and the effect that the change in particulate standard from PM<sub>10</sub> to PM<sub>2.5</sub>, would have on operations.

On 04 June 1999, discussions were opened with CDR Ottlinger, MSC, USNR, to coordinate the inclusion of Deployment Toxicology Issues in future wargaming exercises.

CAPT Still and CDR Alexander attended the AIHCE Conference in Toronto, Canada from 6 through 11 June 1999.

CAPT Still attended the United States Environmental Protection Agency (US EPA) National Advisory Committee (NAC)/Acute Exposure Guideline Levels for Hazardous Substances (AEGLS) No. 14 meeting in Washington DC from 13 through 16 June 1999.

CDR Alexander, Dr. Kimmel, and Mr. Courson attended briefings regarding Future Combustion Toxicology Programs in San Antonio TX from 14 through 16 June 1999.

LT Wilson attended a meeting with Defense Advanced Research Projects Agency (DARPA) held in New Bern, NC from 21 through 23 June 1999 to discuss current and future research collaborations.

On 28 June 1999, Administration department personnel attended a mandatory USAF training course on domestic travel regulations and procedures.

On 28 June 1999, TOXDET was to participate in the "Blue Skies" Arms Control Conference Training Program as a training facility.

On 19-22 June 1999, CAPT Still attended COT meetings in Washington, DC. CAPT Still also represented the TOXDET at the retirement of CAPT Walter on 22 June 1999.

On 08 July 1999, LT Wilson attended a meeting at NSMRL to discuss Disabled Submarine Escape scenarios and new expert system designs.

On 08 July 1999, Dr. Briggs returned from the Teratology Conference with a number of potential collaborative projects.

CAPT Still and CDR Alexander attended meetings at NEHC, Norfolk, VA, on 08 July 1999.

CAPT Still attended NMRC Meeting in Washington, DC, on 09 July 1999.

CAPT Still attended a CLSECWG/SAHAP meeting at NSMRL Groton, CT, 14 through 16 July 1999.

During the week of 19 through 23 July 1999, LT Wilson attended the 40th Annual Short Course in Medical and Experimental Mammalian Genetics at the Jackson Laboratory in Bangor, ME.

On 23 July 1999, CAPT Still and CDR Alexander attended a meeting of the WPAFB 88th Air Base Wing Commanders Environmental Protection Council.

HM2 Carpenter and HM3 Lehman were awarded a Certification of Graduation on 06 August 1999 from Purina Mills for completing the Laboratory Animal Care Course.

During the week of 09 through 13 August 1999, HMC Toohill attended the Health Care Management Course being held in Bethesda, MD.

On 18 August 1999, CDR Alexander attended a meeting to discuss scenarios and training for future Fleet Battle Exercises (FBE) at the Center for Naval Analysis (CNA) in Washington, DC.

CDR Rossi presented a platform presentation at the Behavioral Pharmacology Meeting in Boston, MA during the week of 31 August 1999. CDR Rossi then proceeded to Washington, DC to attend a DARPA Meeting.

LT Wilson collaborated on a research proposal with Dr. William Hanneman of the Jackson Laboratory and submitted the proposal to the Veteran's Administration (VA).

On 09 September 1999, CDR Alexander attended and presented at an OCONUS meeting, the 16th International Symposium on Military Operational Research, in England.

The Air Force Hazardous Aerospace Materials Mishap Emergency Response - Integrated Process Team (HAMMER IPT) Meeting was held at the Toxicology Detachment on 21 through 22 September 1999, to discuss Air Force-wide plans for handling hazardous aerospace materials in aircraft crashes. An important facet of this was the toxicity of products developed from the burning of advanced composite materials.

CDR Alexander conducted a seminar at Purdue University in Layfayette, IN on 23 September 1999.

On 07 October 1999, TOXDET Officers and HMC attended Biological Terrorism Training at WPAFB.

During the week of 18 through 22 October 1999, TOXDET personnel attended CHMM Training conducted at Wright-Patterson AFB, OH.

CAPT Still attended the NAS/NRC Committee on Toxicology (COT) Meeting held in Washington, DC from 17 through 19 November 1999.

On 22 November 1999, CDR Alexander and LT Wilson passed the National Board for Certified Hazardous Materials Managers (CHMM).

On 26 November 1999, CDR Alexander was selected for the Acquisition Professional Community.

From 28 through 29 November 1999, CAPT Still, Dr. Carpenter, and Mrs. Hedges attended the CO/OIC meeting at NMRC, Forest Glenn, MD.

Dr. Bekkedal, Dr. Briggs, and Mr. Price attended a conference at the Society for Risk Analysis in Atlanta, GA from 05 through 06 December 1999.

CAPT Still attended a AEGLS No. 16 Meeting in Washington, DC from 05 through 10 December 1999.

CDR Alexander attended a Submarine Atmospheres Health Assessment Program (SAHAP) Meeting in Washington, DC on 06 through 09 December 1999.

CDR Rossi attended a DARPA Review Meeting at Stanford University in San Francisco, CA and a DARPA Grant Review of USC in Los Angeles, CA, 06 through 09 December 1999. He also attended a meeting in Columbus, OH at Columbus Instruments on 09 December 1999.

LT Wilson presented a Carcinogenesis lecture and a Teratogenesis lecture at an Essentials of Toxicology Course at the Uniformed Services University of Health Sciences (USUHS) and also attended a SAHAP Meeting in Washington, DC, from 07 through 08 December 1999.

On 20 December 1999, Dr. Briggs conducted EPA GLP Training for the collaborative Air Force/Navy perchlorate study with Wright State University.

On 30 December 1999, FY-02 POM requirements for 6.4 funding were developed.

#### **MEDIA REVIEWED AT TOXDET**

During the week of 18 through 22 October 1999, Dr. G. Bruce Briggs, Geo Centers, was selected as a scientific expert to review a manuscript (entitled *Evaluation of the Teratogenic Potential of Pyrazinamide in Wistar Rats* from the Department of Medicine and Pharmacology at King Saudi University, Saudi, Arabia) for publication in **Toxicological Sciences**, the official journal of the Society of Toxicology.



### 3. Supporting Documents

Scientific and Technical Reports:

#### TECHNICAL REPORTS

1. *Assessment of Exposure to Sensitizing Rosin Derived Compounds From electronics Soldering*, K.R. Still, W.K. Alexander, W.W. Jederberg, P.A. Smith, NHRC TOXDET 99-1, on 10 December 1998.
2. *A Physiologic Model for Predicting Carboxyhemoglobin Formation from Exposure to Carbon Monoxide in Rats*, E.C. Kimmel; R.L. Carpenter; J.E. Reboulet; K.R. Still, NMRI-98-38
3. *Design and Performance of a Vertical Flow Through Furnace for Combustion Toxicology Studies*, J.E. Reboulet, E.C. Kimmel, TOXDET 99-2, on 30 March 1999.
4. *Acute Oral Toxicity Evaluation of 2,6-DIBUTYL-4-NITROPHENOL in Male Sprague Dawley Rats*, #AFRL/HEST-TR-19999-X, K.L. MacMahon; W.H. Baker; W.K. Alexander; K.R. Still; G.B. Briggs; R.J. Godfrey.
5. *Pulmonary Function in Normal Rats*, G.S. Whitehead; E.C. Kimmel; J.E. Reboulet; K.R. Still, TOXDET-99-04, on 11 August 1999, DTIC Accession #A367865PAA.
6. *Design of a Plethysmograph for the Measurement of Pulmonary Mechanics and Intrapleural Pressure in Small Animals During Exposure without Surgical Intervention*, E.C. Kimmel, TOXDET-99-05, on 11 August 1999, DTIC Accession #A367757PAA.
7. *A New Perspective for Identifying Potential Cardiac Sensitizers*, E. Smith; T. Nakayama; J. Powers; G. Briggs; K. Still; R. Hamlin, TOXDET-99-06, on 10 August 1999, DTC Accession #A370055PAA.

## Biography of the Officer in Charge

Captain Kenneth R. Still, Medical Service Corps, U.S. Navy, was born in St. Joe, Arkansas. He received his baccalaureate degree in Biology from Portland State University, Portland, Oregon in 1970. In 1972, he received his Master of Science Degree in Physiological/Chemical Ecology from the same University. He subsequently earned a Doctorate degree in Physiological/Chemical Ecology from Oklahoma State University in 1976. In 1989, he received a Masters in Business Administration degree with emphasis in Financial Management and Labor Relations from Chaminade University of Honolulu, Hawaii.



Captain Still was commissioned as a Lieutenant Junior Grade, Medical Service Corps, U.S. Navy Reserve, in 1977 and entered active duty on January 3, 1978. From January 1978 until November 1981, he served as Afloat and staff Industrial Hygienist, Naval Hospital Bremerton, Washington. During the period of November 1981 through October 1984, he was assigned to the Navy Environmental Health Center, Norfolk, Virginia as Special Assistant to the Commanding Officer for Industrial Hygiene and as Department Head for the Occupational Health Planning and Analysis Department. During this tour Captain Still developed, implemented and taught the Navy's Workplace Monitor Training Program. He next served as Head, Occupational Health Branch, Naval Medical Command (Bureau of Medicine and Surgery), Washington, DC from October 1984 until June 1987. Following this, while attached to Navy Environmental Preventive Medicine Unit Number 6, Captain Still was assigned as Deputy Director, Occupational Safety and Health Programs at Naval Logistics Pacific Command, in Pearl Harbor, Hawaii from June 1987 through June 1989. From July 1989 through October 1990, Captain Still served as Director, Occupational Safety and Health Programs at Commander in Chief, U.S. Pacific Fleet headquarters, Pearl Harbor, Hawaii. From November 1990 through November 1994, he served as Director, Naval Inspector General Oversight Inspection Unit, for Occupational Safety, Health and Environmental Program Compliance in Norfolk, Virginia. During this tour Captain Still directed the Navy Occupational Safety and Health Inspection Program and the Navy Environmental Inspection Team. On 9 December, 1994 Captain Still assumed command as the Officer-in-Charge, Naval Medical Research Institute Detachment (Toxicology), WPAFB, OH.

Captain Still is a member of the American Academy of Industrial Hygiene, the American Industrial Hygiene Association, Society of Toxicology, American College of Toxicology, Association of Government Toxicologists, American Society of Safety Engineers, American Conference of Governmental Industrial Hygienists, Navy Industrial Hygiene Association, Sigma Xi, Society of Risk Analysis, International Occupational Hygiene Association, and the Naval Institute. He possesses quadruple Board Certification in the fields of Industrial Hygiene, Occupational Safety, Environmental Management, and Environmental Auditing. Captain Still is a Registered Environmental Manager, Certified Environmental Auditor, and Registered Environmental Professional under the National Registry of Environmental Professionals, and is Board Eligible for the American Board of Toxicology. Captain Still has over 150 publications in the fields of Industrial Hygiene, Toxicology, physiology, ecology, and Risk Assessment.

Enclosure (1)

REPORT DOCUMENTATION PAGE				Form Approved OMB No. 0704-0188	
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4. TITLE AND SUBTITLE 1999 Command History for Naval Health Research Center Detachment (Toxicology), Wright-Patterson AFB, Ohio				5a. CONTRACT NUMBER	
				5b. GRANT NUMBER	
				5c. PROGRAM ELEMENT NUMBER	
6. AUTHOR(S) Editors: CAPT Kenneth R. Still and CDR William K. Alexander				5d. PROJECT NUMBER	
				5e. TASK NUMBER	
				5f. WORK UNIT NUMBER	
7. PERFORMING ORGANIZATION NAME(S) AND ADDRESS(ES) Naval Health Research Center Detachment Toxicology NHRC/TD 2612 Fifth Street, Building 433 Area B Wright-Patterson AFB, OH 45433-7903				8. PERFORMING ORGANIZATION REPORT NUMBER  TOXDET-00-02	
9. SPONSORING/MONITORING AGENCY NAME(S) AND ADDRESS(ES) Naval Health Research Center Detachment Toxicology NHRC/TD 2612 Fifth Street, Building 433 Area B Wright-Patterson AFB, OH 45433-7903				10. SPONSOR/MONITOR'S ACRONYM(S)	
				11. SPONSOR/MONITOR'S REPORT NUMBER(S)	
12. DISTRIBUTION/AVAILABILITY STATEMENT  Approved for public release; distribution is unlimited.					
13. SUPPLEMENTARY NOTES					
14. ABSTRACT (Maximum 200 words) 1999 command history, covering activities from January to December 1999.					
15. SUBJECT TERMS Naval, health, <b>history</b> , research					
16. SECURITY CLASSIFICATION OF:			17. LIMITATION OF ABSTRACT  UL	18. NUMBER OF PAGES  34	19a. NAME OF RESPONSIBLE PERSON CAPT K. R. Still
a. REPORT UNCL.	b. ABSTRACT UNCL.	c. THIS PAGE UNCL.			19b. TELEPHONE NUMBER (Include area code) (937) 255-6058

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